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Doing Too Much.—I.

AN utter neglect of the grounds of small country places, occupied only during the summer months, was a common sin in America a generation ago. It was especially common in seashore regions, where, moreover, it often seemed that as little thought as possible had been bestowed upon the house itself. No sight was more frequent than the ugliest of bare cottages, unadorned by the architect or the planter, surrounded by grounds which had unavoidably been tampered with and vulgarized in the process of building and road-making, while no effort had been made to restore them to their primitive condition or otherwise make good their loss of Nature's kind of beauty and orderliness. Of course, when many of these unkempt little places existed near one another the general effect of the "colony" was even more distressing than the effect of each of its component parts. And then the constant thought of the sensitive observer was that something "ought to be done"—that Americans ought to be taught to beautify even the most transient of their summer homes, or, at least, to keep their surroundings in a reasonably neat condition.

Times have now changed in this respect, and, on the whole, conspicuously for the better. It is certainly better, whatever the immediate outcome of the change, that people should bestow thought and pains upon their summer homes—should take a real interest in them—than that they should regard them with indifference, merely as needful places to eat and sleep in. It is better as regards the aspect of our summer resorts even when individual results are not as successful, as genuinely artistic, as they might be, and it is distinctly better as testifying to mental and æsthetic growth on the part of those who build and inhabit them. But with the usual impetuosity of the American temperament, we have already begun to go too far in pursuit of our newly embraced aim. From the doing of nothing we are steadily developing a tendency to do too much in the effort to improve our small country places.

Year by year our cities grow larger and more crowded, and this means more uncomfortable during the hot weather; and, as the wealth of their middle classes has likewise increased, their inhabitants more and more generally go forth to the mountains or the seashore, and stay there for longer and longer periods. In our grandfathers' time even a rich New Yorker or Bostonian was content to take or send his family away from town for a month or six weeks. In our fathers' time this period had already doubled itself, and now even the sons and daughters of the citizen who does not consider himself rich expect their full three months of country life, while really rich people often include the greater part of the spring and the autumn as well as the whole of the summer in their term of rural residence.

These facts, of course, are not merely welcome signs of increasing material prosperity, but even more welcome proofs of a growing love for healthful occupations and pleasures. They may be confidently cited as a partial refutation of the charge that life in America is growing steadily more strenuous and nerve-exhausting—that the pursuit of the dollar is ever becoming more all-absorbing and all-sufficient; and also of the old charge that when an American stops working and wishes to recruit he makes his choice between working just as hard at some form of active play, or traveling with a speed which might daunt a commercial drummer or a Queen's messenger. For, be it remarked, while the family of the well-to-do business or professional man still spends much more time in the country than does its working head or his grown-up sons, yet these, too, get more of it than did their fathers or grandfathers.

Another cheerful and hopeful sign is that hotel life, once almost the only resource of the urban American in summer, now has a very powerful rival in cottage life. Indeed, hotel life has been quite killed out by this rival in many places, like Newport, for example, where it once flourished mightily, and everywhere through our mountain districts and along our seashores, myriads of summer cottages yearly spring up, scattered now in rather isolated ways and now gathered into compacter colonies, but always affording opportunities for rational and reposeful family life.

Thinking upon these changes we may, indeed, be glad that, as has been said, the transient inhabitants of our rural regions devote more thought and pains than of yore to the aspect of their abodes, and the fact is all the more agreeable because thought and pains do not by any means invariably mean more money. Indeed, cheapness is studied now to a degree of which our fathers knew nothing, for the desire to own summer homes has spread far outside of the classes which, in their day, alone cherished such an aspiration. But our industrial and mechanical resources and our architectural ingenuity and skill have largely developed, hand in hand with the æsthetic instincts of our public; and thus beauty is not only more desired to-day than it was a generation ago, but is more easily to be purchased for moderate sums. The type of the American seashore cottage used to be a square clapboarded box, with the paint of which it once had boasted largely washed off, standing, perhaps, on stilts on a sandbank, surrounded by shaky-looking piazzas, devoid of vines or beautifying plantations of any sort, and surrounded by an expanse of rough sand, or stony pasture-land, or ragged beach grasses, and approached by a path or a drive which looked as though it had been made by cattle. But its type to-day is a shingled cottage, beautifully colored by the weather only, solid in aspect, attractive in form or showing that it has tried to be, more or less draped with vines and blossoming plants, and encircled by grounds which show the exercise of care, the effort after beauty and, often, the expenditure of a good deal of money.

But just here is the point to which we have especially wished to direct attention. The grounds of our summer cottages, and especially of those in seaboard districts, now often prove the expenditure of a great deal too much money. They prove that in gardening we have not yet advanced as far as we have in architecture. In gardening we less often reveal our sense of the primal facts that beauty must be devised by intelligence, not simply purchased with gold,

and that the keynote of beauty everywhere and always is fitness. We know that we may get a good summer cottage cheaply. We do not yet realize that we may cheaply keep or put its grounds into the best condition possible for them. We know that we must vary our architecture to suit different environments, but, as a rule, we have only one ideal for villa-grounds—the one that may be called the gardenesque ideal—the one that means doing as much upon a given expanse of soil as it is possible to do, and planting as many as possible of those trees and flowers and shrubs which are the gardener's, as distinct from Nature's, favorites; and in thus doing too much, and spending too much, we frequently ruin natural beauty, or eliminate the possibility of it, without achieving our own aim. It is time to learn that, while upon some sites the intelligent planter will try to bestow all the luxuriance and variety, all the finish and polish that he can imagine and can buy, upon others his intelligence will be most clearly shown by holding his hand and shutting his purse after a very little has been done, and by doing that little in accordance with the indications which Nature has given in regard to the special character of that particular site.

By an arrangement recently concluded between the President and Fellows of Harvard College and the city of Boston important additions have been made to the Arnold Arboretum. These include two parcels of land with an area of about twenty acres within the boundaries of the original Arboretum, but reserved by the city for its own uses when it was established; two pieces of land with an area of about three acres on the north-west border of the Arboretum, and purchased by the city last year; a piece of land, the property of Harvard College, south-west of the old Arboretum, with an area of sixty-seven and six-tenths acres; this consists of a high, rolling, grassy hill, the second highest land in the city of Boston. From the summit of this hill fine views are obtained; the wooded portions of the Arboretum lie at its base; to the south all the Blue Hill range is in view; the waters of Massachusetts Bay are seen to the south-east, and to the north and west a broken well-wooded country. With these additions the area of the Arboretum is two hundred and twenty-two and six-tenths acres. Two and a third miles of drives have been finished and planted, and under the new arrangement the city of Boston is to construct one and three-tenths miles of additional roads.

Among the scientific gardens in the United States and Europe, only the Royal Gardens at Kew, with an area of 251 acres, exceed the Arnold Arboretum in size, and it is probably safe to say that no other scientific garden of such an area is so accessible to the people of a great city or possesses such a diversified surface and such advantages in the way of natural woods. The Arboretum lies entirely within the limits of the city of Boston, and is not more than four miles from the centre of population, being easily reached by one line of railroad and by two lines of electric cars, while the parkway which unites the different parks of the City Park System, starting from the Public Garden, on Arlington Street, in the heart of the residential quarter of the city, skirting the town of Brookline and enclosing Jamaica Pond, forms its eastern boundary and connects it with Franklin Park beyond. By this parkway the distance from the Common to the Arboretum is six miles.

Plant-breeding at the Experiment Stations.

THE systematic origination and development of improved varieties of plants requires a thorough and comprehensive knowledge of varieties, plant-growth and heredity, and few fields of horticultural experiment have been productive of greater practical results. Before the introduction of the Wilson Strawberry, our markets were not fully supplied with this delicious fruit, not because the people could not appreciate its worth, nor because gardeners were unable or unwilling to grow it, but because no variety had been found sufficiently productive to be generally profitable, or sufficiently firm to endure long carriage. The thousands of acres of vineyards in nearly all parts of our country are, perhaps, mainly the outgrowth of the Concord Grape. Apple-culture in Minnesota, Iowa and Wisconsin is at present waiting for the development of varieties that can endure the climatic conditions of those states, and be equal to those of more favored locations in quality; and persons best informed on the subject believe that these varieties are forthcoming.

If these propositions are true, plant-breeding, by which I mean the systematic production and development of improved varieties, is certainly one of the most important fields for work in our experiment stations. Yet, how little is being done in this line! How many of the new varieties that are introduced each year come from our experiment stations? The Ignotum Tomato, introduced by Professor Bailey, has become a standard variety, but Professor Bailey has never claimed that he originated this Tomato. Besides this, I do not recall a single variety of fruit or vegetable that has been disseminated from a state or government experiment station that has attained any prominence.

It has been said that Mr. Luther Burbank, of California; Mr. E. S. Carman, of New Jersey, and Mr. T. V. Munson, of Texas, have each of them done more for horticulture in the way of improving varieties than all of the experiment stations combined. It would seem that the trained horticulturists of our stations, with all the needed appliances and with help at their command, ought to be able to accomplish as good work in this field as private horticulturists, who must take the time from their own business and develop the varieties at their own expense. Our experiment stations should be sending out new varieties to these enthusiastic amateurs, and should keep them so busy with the work of testing that they would have no time to originate varieties. But at present the machine is working in the opposite direction. The amateurs are furnishing the varieties, and too many of our station horticulturists seem to think that they are doing their whole duty in gathering these together, planting them side by side, and publishing notes of their behavior as fit material for an experiment station bulletin.

I am aware that there is another side to this subject. I know by painful experience how difficult it is to find the time needed for this work, so many are the details that fall to our lot. I realize, too, that our stations are young yet, and that considerable time is required to develop a new variety. Nor am I unconscious of the substantial progress that is following experiment-station work in other departments of horticulture. Nevertheless, I have a deep-seated conviction that results of the first importance must come from plant-breeding and that our stations should devote more attention to this subject.

Experiment Station, Madison, Wis. *E. S. Goff.*

Birds of the Arnold Arboretum.

ALTHOUGH the suburbs of Boston are peculiarly well fitted for the abode of a great variety of birds, the continual encroachment of urban conditions will eventually make such a place as the Arnold Arboretum a precious spot to the city bird-lover who is obliged to look near at hand for the enjoyment of his favorites. The Arboretum is well favored in its natural features as a home of birds, and the artificial plantations are of such a character as to invite the stay of many species that would naturally retire before the growth of a large city. As the surrounding country becomes more and more densely populated it will be interesting to see how many of the present feathered tenants will remain. It seems worth while, therefore, to put on record a statement of the present bird population of the place. The following lists, made from observations during the past few years, are intended to include only those species actually resident in the Arboretum during the summer or winter. No account is taken of the numerous migrants

that pass through during the spring and autumn, or of the irregular winter visitors, like the Pine Grosbeak, the two Crossbills, Redpoll and Siskin, which are occasionally abundant. The summer birds all nest within the boundaries except the Barn Swallow, a colony of which breeds on an adjoining estate in one of the few "Swallow-barns" yet left within the city limits, and uses the Arboretum as a constant feeding-ground. It will be seen that the lists include some of our most attractive birds of song or plumage. What an addition to any park is the presence of such birds as the Wood Thrush, Veery, Rose-breasted Grosbeak, Bobolink, Scarlet Tanager, Indigo Bird, Quail and Partridge. May they long delight us and our successors!

I.—SUMMER RESIDENTS.

Actitis macularia	Spotted Sandpiper.
Colinus virginianus	Bob-white.
Bonasa umbellus	Ruffed Grouse.
Coccyzus americanus	Yellow-billed Cuckoo.
Coccyzus erythrophthalmus	Black-billed Cuckoo.
Dryobates pubescens	Downy Woodpecker.
Colaptes auratus	Flicker.
Chætura pelagica	Chimney Swift.
Trochilus colubris	Ruby-throated Humming Bird.
Tyrannus tyrannus	Kingbird.
Sayornis phœbe	Phœbe.
Contopus virens	Wood Pewee.
Empidonax minimus	Least Flycatcher.
Cyanocitta cristata	Blue Jay.
Corvus americanus	Crow.
Dolichonyx oryzivorus	Bobolink.
Molothrus ater	Cowbird.
Agelaius phœniceus	Red-winged Blackbird.
Icterus galbula	Baltimore Oriole.
Carpodacus purpureus	Purple Finch.
Spinus tristis	Goldfinch.
Poocætes gramineus	Vesper Sparrow.
Spizella socialis	Chipping Sparrow.
Spizella pusilla	Field Sparrow.
Melospiza fasciata	Song Sparrow.
Pipilo erythrophthalmus	Towhee.
Habia ludoviciana	Rose-breasted Grosbeak.
Passerina cyanea	Indigo Bunting.
Piranga erythromelas	Scarlet Tanager.
Chelidon erythrogaster	Barn Swallow.
Ampelis cedrorum	Cedar Waxwing.
Vireo olivaceus	Red-eyed Vireo.
Vireo gilvus	Warbling Vireo.
Vireo flavifrons	Yellow-throated Vireo.
Mniotilta varia	Black and White Warbler.
Helminthophila chrysoptera	Golden-winged Warbler.
Dendroica æstiva	Yellow Warbler.
Dendroica pensylvanica	Chestnut-sided Warbler.
Dendroica virens	Black-throated Green Warbler.
Dendroica discolor	Prairie Warbler.
Seiurus aurocapillus	Oven-bird.
Geothlypis trichas	Maryland Yellow-throat.
Setophaga ruticilla	Redstart.
Galeoscoptes carolinensis	Catbird.
Harporhyncus rufus	Brown Thrasher.
Parus atricapillus	Chickadee.
Turdus mustelinus	Wood Thrush.
Turdus fuscescens	Wilson's Thrush.
Merula migratoria	Robin.
Sialia sialis	Bluebird.

II.—WINTER RESIDENTS.

Colinus virginianus	Bob-white.
Bonasa umbellus	Ruffed Grouse.
Buteo lineatus	Red-shouldered Hawk.
Dryobates pubescens	Downy Woodpecker.
Colaptes auratus	Flicker.
Cyanocitta cristata	Blue Jay.
Corvus americanus	Crow.
Spinus tristis	Goldfinch.
Melospiza fasciata	Song Sparrow.
Spizella monticola	Tree Sparrow.
Junco hyemalis	Snowbird.
Lanius borealis	Northern Shrike.
Certhia familiaris americana	Brown Creeper.
Sitta carolinensis	White-breasted Nuthatch.
Parus atricapillus	Chickadee.
Regulus satrapa	Golden-crowned Kinglet.

Arnold Arboretum. *C. E. Faxon.*

On the Tanning Properties of the Bark of Three North American Trees.

AS is well known, the bark of Quercus densiflora, of California, is popularly considered the most valuable tanning material produced in the Pacific states of North America. This Oak is the only American representative of a peculiar group of trees which inhabit south-eastern Asia, and are intermediate in botanical characters between the true Oaks and the Chestnuts. There is another genus, Castanopsis, which is also intermediate between the Oaks and the Chestnuts, and also of south-eastern Asia, but, curiously enough, with a single representative in Oregon and California, Castanopsis chrysophylla, a very beautiful tree, which the Californians call the Gold-leaved Chestnut, from the bright golden scurf which covers the lower surface of the leaves. Some botanists treat Castanopsis as a section of Castanea, while others, like Dr. King, of Calcutta, who has made a special study of the genus, although finding no very good characters by which it can be distinguished from one of the Asiatic sections of Quercus, maintain the genus for purposes of convenience. The relationship of this tree to Quercus densiflora on one hand, and to the Chestnut on the other, suggested that its wood and bark might contain valuable tanning properties; and, at our suggestion, Professor Henry Trimble, the professor of analytical chemistry in the Philadelphia College of Pharmacy and the American authority on tannins, has made an examination of the bark and wood, as well as of the bark of Quercus densiflora and of the common eastern Hornbeam, Ostrya Virginiana, with the results which he has set forth in the following letter:

The following figures represent the results obtained by me on the wood and bark of Castanopsis and on the bark of Quercus densiflora and Ostrya Virginiana, the last collected in June near Philadelphia. As the sample of Castanopsis bark was quite "green" when received, I presume it was collected in the early part of June.

	Moisture.	Tannin, in absolutely dry sample.	Ash, in absolutely dry sample.
Castanopsis bark.	42.72 per cent.	18.92 per cent.	3.70 per cent.
" wood	9.75 "	3.67 "	0.72 "
Quercus densiflora bark	10.31 "	16.12 "	2.46 "
Ostrya bark	20.41 "	6.49 "	8.47 "

The purified tannins from the Castanopsis bark and from the bark of Quercus densiflora gave, on elementary analysis, the following results:

	Castanopsis.	Quercus densiflora.
Carbon,	60.69 per cent.	60.71 per cent.
Hydrogen,	4.95 "	5.21 "
Oxygen,	34.36 "	34.08 "
	100.00	100.00

These results, when taken with the fact that they gave green precipitates with salts of iron and precipitates with bromine water, indicate that the tannins from Castanopsis bark and wood, from the bark of Quercus densiflora and from Ostrya bark are identical, and that they all belong to the Oak-bark group of tannins.

The Ostrya bark contains nearly enough tannin to make it valuable in the leather industry, and the barks of Castanopsis and of Quercus densiflora ought to be especially valuable, since there are very few barks that equal them in percentage of astrigent principle. Of course, I do not know how abundantly the trees occur; you undoubtedly have that information.

College of Pharmacy, Philadelphia. *Henry Trimble.*

Castanopsis, although it does not form forests in California, is not rare on the coast ranges of northern California, where it grows to its largest size, sometimes to the height of more than eighty feet, so that this tree may be expected to become a valuable factor in the tannin supply of the Pacific states.

The specimens of bark of Castanopsis and Quercus densiflora were obtained for Professor Trimble's analysis by Miss Alice Eastwood, the botanical curator of the

California Academy of Sciences. The wood of Castanopsis, analyzed, was from a tree cut in 1880 for the Forestry Division of the Tenth Census of the United States.

Foreign Correspondence.

Pelargoniums.

THE Pelargonium fills as important a place in indoor gardening as is filled in the open-air garden by the Rose and Rhododendron. The analogy may be carried even further, the origin of the garden races of the three genera being similarly mixed. The many and beautiful varieties of Show, Fancy, Zonal and Ivy-leaved Pelargoniums now cultivated in every garden are the result of cross-breeding and selection extending over a period of something like one hundred years, and the work still goes on, although with much less vigor than formerly. New varieties are, however, added annually by such raisers as Messrs. Lemoine, Cannell, Pearson and Turner, and some idea of how much has been done in this country toward improving and multiplying the Pelargonium may be gathered from the fact that the Royal Horticultural Society awarded certificates to about seven hundred varieties in the period between 1860 and 1890. Twenty years ago these plants were much more in favor with the leading English horticulturists than they are now, while in the first quarter of the present century there were special exhibitions, special publications and fervid discussions in the horticultural periodicals, all devoted to the Pelargoniums, much as they are to the Chrysanthemum at the present time. But if Pelargoniums are not now in the first rank of fashion they have not lost ground, for they are just as important in the gardens of the million as they ever were, and I question if even the Rose is so universally grown and loved as the Pelargonium.

The history of the origin of the garden Pelargonium, so far as it is known, has been admirably summarized by Mr. Burbidge in his *Propagation and Improvement of Cultivated Plants*, pp. 319–331. Much information concerning the early sorts can also be obtained from Andrews' *Monograph of the Genus Geranium* (1805), which contains beautifully executed colored figures of the principal species, varieties and seedlings then in cultivation. That the crossing of the species one with the other had been in operation for some time even at that early period is shown by the following extract from Andrews, who writes of "the introduction of the African species within the last twenty years from the Cape of Good Hope, whose prolific character seems to know no bounds in the production of endless seminal varieties, which, Proteus-like, appear in ever-varying forms, and for which numerous variations we are indebted to the industrious bee, which conveys the pollen from one plant to another."

Sweet's *Geraniaceæ*, a work of five volumes, published 1820–30, containing 500 colored pictures, chiefly of Pelargoniums, nearly all of them of known or supposed hybrid origin, also contains much information as to the early history of the garden Pelargonium.

Of the 170 species of Pelargonium known only very few can be traced in the races now grown. These races are, roughly, four, the Zonal or bedding Geraniums, descended from P. zonale and probably P. inquinans; the Ivy-leaved Geraniums, the progeny of P. peltatum and P. hederæfolium; the Show Pelargonium, from P. grandiflorum and P. cucullatum, and the Fancy Pelargonium, the source of which is unknown. This quartette excludes the scented-leaved Pelargoniums, which can scarcely be said to be a garden race.

These four races are all quite distinct from each other, and, except in one instance, they have refused to interbreed, crosses between the Show and Zonal, or Show and Ivy-leaved sections being unknown. But we have crosses recorded between Zonal and Ivy-leaved sorts, although they were "nearly useless for cross-breeding purposes, as they rarely produced seed or fertile pollen." The present wonderfully improved race of Ivy-leaved varieties is said to have had its origin in a chance seedling which made its appearance in a garden in Nice about twenty years ago, and which was secured by Monsieur Jean Sisley, a great French breeder of Pelargoniums, who thought that owing to its fertility it would prove valuable in the hands of a clever hybridizer.

Of course, all the varieties of Pelargonium are reproduced only by means of cuttings, their seeds being worthless except as a possible source of new varieties. But as the proportion of promising seedlings to worthless weeds is about one in ten thousand, the prospect of obtaining a good variety by this means is not hopeful. A large proportion of the varieties we grow are from bud-sports. So far in relation to Pelargoniums generally.

The beautiful Show and Fancy races of Pelargonium still have many fanciers among English horticulturists and still figure prominently at our plant exhibitions. The illustration recently published in Garden and Forest was from a photograph of a specimen exhibited at last year's Temple Show by Mr. Turner, of Slough, who has been famous as a raiser, grower and exhibitor of these plants for nearly fifty years, and who has no rival among those who grow them to-day. Some of Mr. Turner's specimens measure five feet in diameter and bear from one hundred to one hundred and fifty trusses of expanded flowers, which are usually at the best early in June. These specimens are grown in about four years from cuttings. All the flowers have to be "gummed" if the plants have far to travel, or if they have to stand in an exhibition hall lighted by gas. The largest pots used for these specimens do not exceed one foot in diameter; usually they are only nine inches. It is unnecessary here to go into the details of the cultivation of such specimens, but the general grower of Pelargoniums will, perhaps, be interested in knowing that the mixture Mr. Turner uses for his plants, both Show and Fancy, is one of good yellow loam, well-rotted stable manure, bone-dust, coarse sand and charcoal. The following is a selection of the best dozen varieties in each section, for which I am indebted to Mr. Turner:

Show varieties: Amethyst, Duke of Norfolk, Goldmine, Indian Yellow, Joe, Magnate, Maid of Honor, Martial, Mrs. Coombs, Magpie, Sister of Mercy, Spotted Gem.
Fancy varieties: Ambassadress, East Lynne, Ellen Beck, Delicatum, Fanny Gair, Lady Carrington, Miss E. Little, Mrs. Hart, Mrs. Pope, Phyllis, Princess Teck, The Shah.

London. *W. Watson.*

New or Little-known Plants.

Carpinus cordata.

THIS is one of the largest and, probably, the most beautiful of all the ten or twelve species of Hornbeam that are known. It belongs to that section of the genus (Distegocarpus) which differs from the Hornbeams of the United States and Europe by its deeply-furrowed and scaly bark and large winter-buds, by the long lanceolate acute scales of the flower aments, those of the staminate inflorescence being distinctly stalked, and by the involucres of the fruit which resemble in color and texture those of Ostrya (the Hop Hornbeam), although, unlike those of that tree, they are not bladder-like nor closed, a large basal lobe or one or both margins of the ovate-acute involucre being infolded over the nut, while in our Hornbeam the involucre is halberd-shaped, usually three-lobed, and the nut is not covered by it.

Two of these peculiar Hornbeams, all that are now known, inhabit Japan; one of them, Carpinus Carpinus, the type of the genus Distegocarpus established by Siebold & Zuccarini, but subsequently reduced to Carpinus, has already been figured in this journal (vol. vi., f. 56). It is a tree forty or fifty feet in height, with a trunk sometimes eighteen inches in diameter, wide-spreading branches, dark green ovate-acute leaves, and clusters of fruit nearly

two inches long. This handsome tree, which is common at low elevations on the mountains of central Japan, has been in cultivation in the United States and Europe for many years, and is perfectly hardy in the neighborhood of Boston, where there are now several shapely specimens large enough to produce flowers and fruit.

The second species (see illustration below, on this page) is less well known; it is a more northern tree, growing only on the main island of the Japanese group at high elevations, its true home being in the deciduous-leaved forests of central and northern Yezo, where it is very common and the only Hornbeam, and in Manchuria. On the

Fig. 41.—Carpinus cordata.—See page 294.

1. A flowering branch, natural size. 2. A scale of a staminate ament with stamens, enlarged. 3. A scale of a pistillate ament with flowers, enlarged. 4. A fruiting branch, natural size. 5. An involucre of the fruit, with its lateral lobe folded over the nut, natural size. 6. An involucre of the fruit, the lateral lobe turned back to display the nut, natural size.

hills near Sapparo, in Yezo, it is a tree often forty feet in height, with a trunk eighteen inches in diameter. It is distinguished from Carpinus Carpinus by its larger winter-buds, which are nearly an inch long, by its thinner broadly ovate and deeply cordate leaves, which are often six or seven inches long and three or four inches wide, and by its much larger clusters of fruit, frequently five or six inches in length and an inch and a half in width.

The seeds of this beautiful and distinct tree, which is one of the most interesting inhabitants of the forests of north-eastern Asia, which I gathered in Yezo three years ago, unfortunately did not germinate, and it is not yet, I believe, introduced into our gardens. Judging by the fact that its associates in the Yezo forests are all hardy here, it may be expected to flourish in New England. *C. S. S.*

Plant Notes.

Hemerocallis minor.—This plant, which appears in gardens under several names, as Hemerocallis Thunbergii, H. Sieboldii and H. graminea, is a native of eastern Siberia and Japan. It is less stately, perhaps, than H. flava, which flowers early in June, but it is a very beautiful plant, with its long grass-like leaves and pale yellow fragrant flowers clustered on slender stems two feet or more tall. It has been in bloom now for the last two weeks and is one of the best and hardiest of summer-flowering herbaceous plants, alike suitable to decorate a border in the flower-garden or to naturalize in some half-wild woody glade. The flowers, when cut, last a long time and are well suited to arrange in large vases for the decoration of the house, like those of H. flava, to which we lately called attention in these notes (p. 264), where another early-flowering species, H. Middendorfii, by a typographical error appeared under the name of H. Dumortieri.

Lonicera Ruprechtiana.—Several of the so-called Bush Honeysuckles are not surpassed as hardy shrubs in northern gardens. They are very hardy; they grow to a large size, and with room in which to develop become shapely specimens; they flower profusely, and the fruit, which ripens in summer when there are few conspicuous fruits in the shrub garden, is very showy. There is a great bank of these plants in the Arnold Arboretum by the side of one of the drives, and just now, when the plants are covered with berries of all shades of red, scarlet and orange, it is very effective, as it was in May when the plants were in bloom. When covered with fruit, the Manchurian Lonicera Ruprechtiana is, perhaps, the most showy of these plants; it is a shrub eight or ten feet high and broad, with ashy gray branches, small pale blue-green leaves and scentless flowers, which quite cover the plant early in May, and are white when they unfold, but turn light yellow in fading. The fruit, which ripens rather later than that of the Tartarian Honeysuckles, and is now just beginning to color, is, when fully ripe, bright scarlet and almost transparent; it is so bitter that birds do not eat it, and it remains for a long time in perfection on the plant. L. Ruprechtiana is easily raised from seeds like the other Bush Honeysuckles, and it may be propagated by cuttings made in summer; it grows rapidly in good soil, requires no particular care, and will probably, like several other plants of this class, grow to a great age. For gardens in Canada and northern New England, on the shores of the great lakes, and in the northern plain region, it may be expected to be as hardy and satisfactory as the Tartarian Honeysuckles.

Taxus cuspidata.—The value of this Japanese Yew as an ornamental plant in the northern United States becomes more evident every year as it is better known and more generally planted. It is the only Yew of tree-like habit that is absolutely hardy in New England, and there is no reason why it should not be as generally used in this country as the European Yew, Taxus baccata, is in England. In the forests of Yezo, where it often grows to the height of sixty feet, T. cuspidata is a pyramidal tree with a tall, straight, thick trunk, covered with beautiful, bright red bark; but in this country, where it has been growing for nearly twenty-five years, it has not yet lost its juvenile habit and appears as a dense, broad-based shapely bush, occasionally fifteen or twenty feet tall and broad. The foliage is slightly tinged with yellow, and the aspect of the plant is more cheerful than the European Yew, which grows much more slowly. In Japan the Yew is frequently planted in gardens and is often cut into fantastic shapes; it would make an excellent hedge-plant in this country, and is adapted, of course, to all sorts of topiary work.

Abies Cilicica.—This, with the single exception of the blue form of Abies concolor from the Rocky Mountains of Colorado and New Mexico, is, perhaps, the most beautiful of the Silver Firs that are perfectly hardy and satisfactory in the north-eastern states. The Cilician Fir can be seen in great beauty in Mr. Hunnewell's pinetum at Wellesley, Massachusetts, where there are a number of specimens; in Dr. Hall's garden, near Bristol, Rhode Island, and in the Hoopes' pinetum at West Chester, Pennsylvania. Some of these trees are now forty feet high, and are compact sharp-pointed pyramids clothed to the ground with pale silvery foliage. Unfortunately, this fine tree is difficult to obtain, and still rare in collections. It does not thrive in western Europe, where the young shoots, which appear very early in the spring, like those of many other alpine trees, are killed by late frosts, and European nurserymen, therefore, do not propagate it. Seeds from wild trees are not easily procured. The trees cultivated in this country have not produced seeds yet, so that there is no way of increasing this Fir but by means of grafts, and grafted conifers are always unsatisfactory and usually short-lived. A. Cilicica inhabits the Taurus and Anti-Taurus Mountains, in the ancient Cilicia, and the Lebanon, and is said to form great forests at elevations between three thousand and seven thousand feet above the level of the sea. Good fresh seeds gathered at high elevations in its native forests would command good prices in this country, where comparatively few distinct Silver Firs can be satisfactorily grown.

Cultural Department.

Some July Flowers.

THE earliest Gladiolus to bloom this year, as well as last, is G. Leichtlinii, a small-flowered species, with bright scarlet flowers shading to crimson in the centre, and with yellow blotches on the lateral lower petals. It is pretty and interesting, but not showy. Some of the Gandavensis kinds are showing a little color, but will not be open for some days. They promise to be remarkably fine this year, growing with unusual vigor and displaying a deep and strong verdure. Those raised from seed last year will nearly all bloom this year, if I may judge from their present appearance, and I even expect three or four of this year's seedlings to do so. This strength of growth has become manifest only during the last three weeks, which have given us abundant rains, and copious dews on fair nights.

Several years ago I stated that Gladiolus purpureo-auratus proved perfectly hardy here, and had established itself in one of my mowing-fields. It still continues to come every year, but the scythe cuts it off before it can blossom. I also find G. Saunderii equally hardy. A year ago, while walking in a place I seldom visit because of its rough condition, it being too stony for cultivation, I came upon a plant of this species of a more robust growth than in my cultivated fields, and bearing several of its beautiful and showy flowers. Upon examining it I found the old stalks of two previous years. I left the plant, of course, and it is now in full growth, and will flower well. It has had no protection whatever in all the time it has been there; indeed, its presence there at all is a mystery to me.

A long row of many hundred spotted Callas, covered with their white spathes, is showy just now. Many of the blooms are past, and many are yet to open. Among them are many with two spathes together, the so-called double-flowered form. Such cases occur every year, and I saved some seed last year, and am trying to establish a race which will always produce two spathes. The yellow Calla, Richardia Elliottiana, seems to be of slow growth. My specimen is still alive and healthy, but I fear will not flower. A few days ago I visited Mr. Tailby's garden at Wellesley, and found his specimen with a beautiful golden-yellow spathe and with another stalk bearing a fine

head of seed. He told me that Mr. Veitch, who called a few weeks ago, said that no tuber of it had ever produced more than one flower in England. Mr. Tailby is a most persistent hybridist, and has a large stock of plants raised from Richardia Little Gem, fertilized with pollen of R. Elliottiana.

Hymenocallis calathinum is another feature in my garden at the present time. A week ago I counted the flower-stalks then in sight, and found seventy-seven; to-day I find that many others are showing, so that the entire number will probably reach one hundred and twenty. I have never seen the humming-birds visit these flowers, but many insects do, and have acquired the habit of making a hole near the base of the tube instead of creeping down into it. Some years ago I fertilized the late-flowering H. Amancaes with pollen of H. calathinum. I got three seeds, all of which grew and made bulbs, two of which were lost last winter; the third is yet alive, and may bloom some day.

Seedling Dahlias are now showing a few flowers, but a July Dahlia, especially a single one, is not good for much, and I cut them off as fast as they open. Not until August will they show their true character.

Canton, Mass. *W. E. Endicott.*

Hardy Perennials.

THE tallest species of the Globe Thistle is Echinops commutatus, from Austria, which attains a height of seven feet, branching from about two feet above the ground. Though a much more stately plant than E. Ritro, it has not so striking a flower. The heads are nearly white and about two inches in diameter. It seems to attract more honeybees at this time than any other flower, for the heads are covered with these little workers most of the day.

Among the Campanulas now in flower, the C. latifolia is as attractive as any. It is a native of Great Britain, attains a height of two feet in good soil, bearing several white or blue flowers two and a half inches long. It is a trifle later in blooming than the Peach-leaved Campanula, C. persicæfolia, which, though not entirely past bloom, has been in flower for more than a month. Both species have two colors, white and blue, which, when growing together, are quite pretty. They are of easy culture and quite hardy.

Morina (elegans) longifolia, a native of Nepaul, attains a height of two feet or more. Before flowering it so closely resembles a Thistle that the workmen are inclined to pull it for a weed. It belongs to the natural order of Dipsaceæ. The flowers are crowded in whorls in the axils of the leaves, and are nearly white when first appearing, but change with age to a delicate pink and finally to crimson. It is a plant that requires more time to attain the flowering stage than most perennials; it took two years here. It is apparently perfectly hardy, but likes a little shade.

Gentiana cruciata needs more moisture than most common garden-soil affords. On this account it may not always succeed. When the roots can always find moisture it is an easy plant to grow. The pale blue flowers are crowded in the axils and are also terminal. I like much better to grow the Wind-flowered Gentian of Great Britain, G. pneumonanthe, because it seems to do well in ordinary soil and the flowers are a much deeper blue.

Gentiana Thibetica is also blooming at the same season, but the nearly white flowers are less attractive than most Gentians. This, however, is compensated in the finer foliage, which is the best I have seen in a Gentian. The flowers open only in the sunshine. In cloudy weather or late in the afternoon they close.

The Tartarian Sea Lavender, Statice Tatarica, which blooms about this time, is a pretty species, and quite hardy so far as I can see. It is, when in flower, about a foot high. The rigid, branching, diffusely spreading stem is covered with pale red or nearly white flowers. Its foliage is all at the base of the stem, close to the ground. With me it did not bloom until the second year from seed.

Charlotte, Vt. *F. H. Horsford.*

Fancy Caladiums.

TO the commercial florist these plants are of little service, but in private gardens they are useful for the decoration of the greenhouse during the summer months, when they are apt to be left somewhat bare on account of the removal of such plants as Palms, etc. They occupy but little room during the spring when the greenhouse space is often taxed to the utmost. Sometimes they are started early and forced for Easter decoration, but only a few of the hardier varieties are suited for this purpose, and the practice is by no means general. One of the best for this use is the old Argyrites. Probably the best time for starting the general stock is in March, if a temperature of sixty to sixty-five degrees can be maintained, but if not they had better be left dormant a month later. A general custom is to place them first in sphagnum moss and pot them on after they have started a little, but we find they do equally well and are less troublesome when placed at once in small pots in a compost of two parts leaf-mold and one part each of sand and sod-earth. Should any of the tubers show signs of rotting, a little powdered charcoal should be rubbed on the infected parts. They start best in a brisk bottom-heat, and as they root quickly require frequent shifting, but large shifts must always be avoided. The potting compost should be light and porous, moderately enriched with well-rotted manure. They should be shaded from strong sunlight and syringed daily in bright weather. Toward the end of September, when the foliage begins to show signs of dying down, water should be gradually withheld, and when thoroughly dried out the tubers may be shaken out and stored in dry sand and set in a dry place, where the temperature will not fall below fifty-five degrees.

The varieties are so numerous that any attempt to describe or enumerate them is useless, and new varieties are constantly being added. The principal aim of the raisers of these new varieties appears to be fineness of texture, which is in most cases accompanied by delicacy of constitution, and this makes the newer varieties decidedly harder to handle than the old bright-colored and more robust ones. Attempts have been made to use some of the hardier varieties of Fancy Caladiums for bedding out, but they have never proved a success.

Tarrytown, N. Y. *William Scott.*

Papaver bracteatum.—I remember reading some time since a controversy as to whether the dark form of the Oriental Poppy was a mere seed variation or a well-marked species. It was so long ago that I forget the decision, but it has recurred to me of recent years when seeing them growing together in the garden. I decided to save seed and see whether there was any tendency to reversion to the common scarlet varieties among the plants raised. It has been the impression among growers that the peculiarity of having bracts just under the flowers was nothing to be guided by, that the rich dark color was not constant, that the plant itself could only be propagated by its own roots, and that seedlings raised therefrom would revert to the common Papaver orientale. There is, however, a decided difference in the habit of the two plants, and they can easily be distinguished when not in bloom. P. bracteatum has foliage that is much more rigid and aculeolate than P. orientale, while the flower-stems are perfectly rigid even when in bloom, so that apart from the color there seem to be good grounds to suppose that it is something more than a mere seed variation, or even selection. The results here have emphasized this opinion, for out of a large number of P. bracteatum raised from seed saved without any special protection against insect agency, and growing side by side with the other variety, not one has shown any tendency to revert, but all are true dark-flowered P. bracteatum. P. orientale does vary a great deal from seed; of the many in the garden here no two are alike, some having four petals and some more, as many as eight, while the spots at the base of the petals are eliminated in some cases altogether, and vary greatly in others. Of the two, this variety has proved to be much less constant than P. bracteatum. It is not safe to assume which is the species, and the authorities differ. P. orientale was introduced some time prior to P. bracteatum; hence the former is generally regarded as the species.

Dipladenias.—These have been noted before as among the finest of summer-flowering climbers for the greenhouse, and they are now at their best, blooming with great freedom in full sunshine. It is not often that seeds are produced under cultivation, but a plant last season matured a fine seed-pod here, from which we have now some three dozen young plants growing rapidly, and we hope to bloom them next year. There is a wonderful variation even now in the young plants; no two seem to be alike in foliage, and either the shape or tint is different in most of them. We hope to get some good varieties from these. The seed parent was Dipladenia profusa, crossed with pollen of D. Brearleyana. Judging from present appearances, we shall get all the forms known in gardens from this lot of plants. Dipladenias are natives of Brazil. There are but two that are pink and regarded as species. All the others, more than a dozen in number, are of garden origin. The great value of these plants lies in the fact that flowers are produced from the same stems for months in succession. We have picked flowers in June, and as late as October from the

same stem, and this free-flowering habit makes them desirable where a brilliant climber for the greenhouse is required. They will stand well in winter in a temperature of fifty degrees, and require far less heat than was generally supposed necessary by the older cultivators. This may account for the unpopularity of the genus at the present time. We grow them in Fern-root alone. Loamy soil is liable to become sour and inert, and the plants speedily die when this is the case.

South Lancaster, Mass. *E. O. O.*

The Forest.

The Need of Forest Schools in America.

THE extract which follows is taken from a paper read before the New York farmers by Mr. Gifford Pinchot, of this city:

Since the appointment of the first State Forest Commission in 1884 the Adirondacks have attracted a steadily increasing share of public attention. The interest of the people in the preservation of the state forest-lands has found expression in various legislative enactments, the last of which is a rather curious commentary on those which have preceded it. I refer to the recent constitutional amendment which prohibits the lease, sale or exchange of state forest-lands, and the sale, removal or destruction of the timber. Translated into terms of the situation, the people of New York, through their enthusiastic support of this amendment, may be imagined to speak somewhat as follows: "For ten years we have been trying to provide suitable protection and management for the state forest-preserves. At the end of that time we find ourselves reduced to the conclusion that the very best thing we can do is to give up all hope of a sound and profitable management, and simply content ourselves with putting it out of the power of the guardians of the forest to do it any harm." It is as though a man were to let his valuable farm lie fallow because he had not sufficient confidence in his own wisdom, ability and honesty to do anything else.

In view of the attempt made last March by the Forest Commission to turn over many thousand acres of the state lands to the lumbermen, under restrictions which practically interfered very little, or not at all, with their usual methods, I am not sure how much the people of the state were to be criticised for the position they took. The trouble was very much more deeply seated. Like so much of the difficulty which has beset government in this state, the cause lay in the attempt to get something done by the appointment of men who did not know how to do it. And in this case the situation seems to have been aggravated by the fact that the appointer was generally as little enlightened as the appointee. In a word, widespread ignorance of the meaning and object of forestry has been the keynote of the attempt of the Empire State to do something for its forests. The natural result has followed, and the state has made confession of its inability in the weightiest document which it is in its power to frame.

The situation may be summed up in this way: New York state owns a great body of forest-land whose preservation is of enormous value to its interests in more ways than I can stop to mention. This property, whose very existence is a blessing, is producing year by year a vast amount of most valuable material, the removal and utilization of which under regular forest-management would in no sense impair or even jeopardize the passive usefulness of the forest. Let me repeat this statement. Systematic forest-management on the state lands in the Adirondacks neither involves nor implies any reduction of the good influences of the forest in its relation to any of the vital interests of the state which depend upon it. On the contrary, what it does mean is greater safety, better protection and a more certain usefulness, and all these things obtained not merely without cost to the state, but with a growing revenue thrown in. If these things are so, it becomes natural to ask why advantage of them has not been taken. The answer has already been given. As a community we do not know what forestry is able to do, nor do we even realize the subject-matter with which it deals.

If I say that forestry has nothing whatsoever to do with the planting of road-side trees, that parks and gardens are foreign to its nature, that it has no connection with the decoration of country places, that scenery is altogether outside of its province, and that it is no more possible to learn forestry in an arboretum than to learn surgery in a drug store, I am making a conservative statement with which every forester will agree. Forestry deals exclusively with forests—a fact which will bear a good deal more publicity than has been accorded to it hitherto. It is connected with arboriculture and landscape art only from the fact that it employs to a certain extent the same raw material, if I may use such a figure, but applies it to a wholly different purpose. That the subjects overlap at certain points is therefore true, but so do carpentry and the manufacture of wood-pulp paper, yet there is no confusion between them. That wise forest-management secures the natural beauty of a region devoted to it is a fortunate accident, but none the less an accident, pure and simple. The purpose of forestry is in a totally different sphere. Forestry seeks to discover and apply the principles in accordance with which forests are best managed, and it has to do with trees only as they stand, or are to stand, together on some large area whose principal crop is trees, and so form part of a forest. The objects of forestry are twofold, because there are two great classes of services which the forest yields to man. On the one hand it has a vital bearing on the water-supply and the prevention of torrents, and an undetermined influence upon the rainfall and climate, and on the other it yields a product which has been so far, and seems likely to remain, indispensable to the progress of civilization. This product it is the province of forest-management to harvest in such a way as to insure a second, and usually a greater, crop of at least equally valuable material. Except in rare instances, to do this is the surest way to secure the preservation of the indirect influences of the forest as they regard water and climate. The safety of the forest can ultimately rest on no other foundation than forest-management, for in no other way can it be made to yield its full service to the needs of men.

If we set what is now over against what is easily possible, we find on one side the indirect usefulness of the forest, in so far as the state lands are concerned, more or less perfectly attained at the price of a large annual appropriation. On the other is equal, or probably greater, security, and a net revenue. The difference between these two things lies in two words—knowing how. Knowing how in forestry is best learned at a forest school, and next to an enlightened public opinion and a scientific administration of the state lands, a forest school is the first need of forestry in New York. Personally, I believe that we must have the school before the wise public opinion, and before anything can be done in the Adirondacks, unless by private owners of woodlands. For, in the first place, the repeal of the constitutional amendment on forestry must be the opening move, and nothing but the broadest diffusion of a right conception of forestry will educate the people to that point. Secondly, administration presupposes men trained for the purpose, and such men are not available at present in anything like the numbers needed. Thirdly, the lumber companies which own large tracts in the North Woods are beginning to think seriously of the future, and men who could advise and assist them would be able to render conspicuous service to the commonwealth. This becomes apparent when we consider that of the whole Adirondack region the state owns less than a quarter. Whether such a school should be a state institution or a part of one of the great universities, and where it should be located, are matters which do not come within my subject to-night. The one thing I want to do is to set before you the present failure of the state in forest-matters, the reason for it, and one of the remedies. The other is the training of the public judgment through constant agitation. Both together are likely to be all too slow in reaching their end. But, whichever is used, it is education which is needed.

Correspondence.

Strawberries in Wisconsin.

To the Editor of Garden and Forest:

Sir,—One of your correspondents (see p. 257) speaks very highly of Michel's Early, Gandy and Parker Earle. This shows how differently plants behave in different localities. With us, Michel gives a few early berries, but is hardly any earlier than Van Deman, Rio or Warfield, and it does not bear enough fruit to pay for picking or planting. Gandy is late in beginning to ripen fruit, but does not continue so long as Warfield; it is a very fine berry, but does not yield freely enough. Parker Earle bears too much, unless on very rich soil, well mulched and well watered; I know of no better late berry for hill or narrow row culture. It does not make plants enough for matted rows; it is perfect in blossom and will pay with above treatment.

Soil and location are very important factors in Strawberry culture, but frosts and drought upset the best laid plans. No Strawberry will stand such frosts and drought as we have had this year and give a good crop. The best of fifty kinds fruit-

ing here in matted rows, after the severe weather such as we have never known before, of perfect flowering plants, are Lovett, Splendid, Enhance and Parker Earle; and of pistillate plants, Haverland, Warfield, Crescent and Bubach. These recovered best of any after the frosts, and if we could have had plenty of rain would have yielded perhaps half a crop.

Of the thirty-six best kinds planted in 1894 and kept in hills of five plants each, each plant being allowed to make only four runners, after three icy mornings in May and one heavy frost on May 27th, which did more damage than the colder nights, Sadie and Swindle, both pistillate plants, gave more than a quart to the hill. Neither of these varieties is profitable in matted rows. Warfield came next, and Gandy was behind twenty others.

Janesville, Wis. *George J. Kellogg.*

Poison Ivy.

To the Editor of GARDEN AND FOREST:

Sir,—That the poisonous principle of Rhus Toxicodendron resides in the bark as well as in the leaves is proved by the fact that men who have to deal with logs and lumber suffer from the poison when they work in the woods in winter. My father has been severely poisoned by handling logs in the mill-yard with dry vines attached after they had been cut several weeks. The volatile character of the poisoning is proved by the well-known fact that susceptible persons are affected by passing to the leeward side of this Rhus. A neighbor of mine undertook to kill out some of the plants by pouring boiling water over them, and the vapors arising carried a sufficient infusion of the poison to produce a very serious case of poisoning. A workman in our garden, whenever he has occasion to meddle with the Ivy, always pulls one of the small leaves and eats a piece of it, asserting that the workmen on the railway along whose embankments the plant abounds always do this as a preventive measure, and with success.

Geneva, O. *S. F. Goodrich.*

Common Plants.

To the Editor of GARDEN AND FOREST:

Sir,—The Mullein in this country is such a disagreeable evidence of bad husbandry that no one would think of planting it for beauty or ornament. In England it is not so universally considered a pestilential weed, and is cultivated for decorative effect. A well-grown specimen is really a magnificent plant, and a bed of them in the Kew Gardens is much admired. Their great velvety gray-green leaves and soft yellow blossoms were a revelation to me, though I had been familiar with them all my life in the pasture-fields at home. Germans call the plant the Kaiser-kerze, the Emperor's taper, and a pretty and appropriate name it is.

At a church festival a few years ago the ornamental value of one of our commonest wild flowers was shown. One end of the large hall was shut in by a rustic fence elaborately decorated with vines, Roses and a mass of creamy-white flowers that were wonderfully dainty in their effect. On the tables inside were offered for sale bouquets of many kinds of rare flowers, and conspicuous among them by its delicate loveliness were cymes of the same creamy-white blossoms. "What do you call them?" asked a gentleman, lifting an artistically arranged cluster from a vase of sparkling glass. "Sambucus Canadensis," answered the young girl in charge, with a faint, mischievous smile dimpling the corners of her mouth; "named from an ancient musical instrument that was made from the wood." And Elder blossoms they were, fragile and sweet as the choicest exotics there.

A plant in a costly jardinière in a luxurious dining-room was the admiration of all who saw it. The leaves were a rich green, with finely cut and curled edges, and it was generally supposed to be some rare Fern. Its owner, when asked its name, called it Pastinaca sativa. I caught a twinkle in her eye one day. My suspicions were aroused. I examined it more closely and discovered it to be Parsley—just a fine, graceful, well-cared for bunch of Parsley, such as is grown in every kitchen-garden in the land.

In our search after beautiful vines we have overlooked one of the choicest ones of native growth. Our English cousins are more discerning, and in many places in that snug little island may be seen Vitis labrusca, our northern Fox-grape. Any one who has seen it trained over an arbor, or spreading its thrifty and abundant foliage over rough rockeries and masses of roots, will not soon forget the impression it gives of wild grace and beauty. It would be difficult to find its equal; yet how few appreciate it! It seems as if nothing short of a celestial vision, such as Peter had, will open our eyes to the beauty of the common things about us.

Emlenton, Pa. *M.*

Southern Pines (North Carolina) Experimental Farm.

To the Editor of GARDEN AND FOREST:

Sir,—The establishment recently of an experimental farm at Southern Pines is a matter of real importance to the fruit-growers of the long-leaf Pine district.

There are hundreds of thousands of acres in the south on which all the timber has been destroyed by the turpentine workers, lumbermen and fires, and which are now great desolate wastes. The sandy soil is for the most part the favorite habitat of the long-leaf Pine and has been regarded as unfit for agricultural purposes. No wonder people in the south have argued that the land was not good for raising crops of Cotton or Corn. And so nothing was done to improve the soil, and many thousand acres in the long-leaf Pine region were, and are to-day, practically abandoned.

Such was the condition of the country, in Moore County, about Southern Pines, when Dr. Von Herff, of New York, began buying large tracts of land. He early saw the necessity of making experiments to determine the requirements of this sandy soil, especially in the way of fertilizers best suited for fruit-growing. It is entirely through his efforts that the experimental farm was established at Southern Pines.

The farm is under the auspices of the State Horticultural Society in coöperation with the North Carolina Experiment Station. Dr. H. B. Battle, of the Station, is interested in the success of the experiments now under way, and has freely given his time and attention to various details. In this he has been assisted by Professor W. F. Massey and Professor Irby, both of the Agricultural College, Raleigh.

The chief object of the managers of the farm will be to find out the requirements of the soil, especially for fruit-growing. The problem is to determine the proper fertilizers to be used. Many analyses of the soils all through the south show that they are deficient largely in potash. Hence, experiments are now being made to measure the need of potash in connection with nitrogen and phosphoric acid.

A number of fruit-crops have been planted on the farm, which comprises about sixty acres. The area for each crop is divided into plots of equal size—"experimental plots," as they are called. These are all treated with different kinds and amounts of fertilizers. The results obtained from all the plots will be collected and studied separately in order that correct conclusions can be drawn.

New York. *L. J. Vance.*

Recent Publications.

We have received the first part of *The Flowering Plants and Ferns of New South Wales, with special reference to their economic value*, by J. H. Maiden, Esq., of the Technological Museum, Sydney, assisted by W. S. Campbell. This work is intended to make known the principal flowering plants and Ferns of the colony, and each part is to contain figures and descriptions of two forest-trees of economic value and of two shrubs or smaller plants, selected on account of their beauty or scientific interest. In the first number are well-executed colored plates, with sufficient analytical detail, of Telopea speciosissima, the Waratah, a stout, erect, glabrous shrub, with crimson flowers in dense ovoid or globular heads about three inches in diameter. The name Telopea, from the Greek telopos (perceived from afar), was given to this plant on account of the conspicuous crimson flowers, and Mr. Maiden tells us it has come to be recognized as the national flower of New South Wales.

The second plant that is figured is Eucalyptus corymbosa, the Bloodwood, a tree which owes its popular name to the fact that it exudes an abundance of resinous gum, which has, when fresh, the appearance of blood. It is a fine timber tree, attaining the height of from one hundred to one hundred and twenty feet, with a trunk from two to four feet in diameter, producing a dark red-purple durable inflammable timber, which is difficult to saw on account of the large quantity of gum that it contains.

The other plants figured are Actinotus Helianthi, the Flannel Flower, an erect perennial umbilliferous plant, curiously like a Composite in general appearance, with

showy pale petaloid bracts forming a star-like involucre; and Acacia glaucescens, the coast Myall, a handsome species with dark, exceedingly hard wood, used in turnery, for mallets and other small articles.

The form of this book, as displayed in the first instalment, is good; the botanical descriptions, which are clear, concise, and not too technical, are enriched with systematically arranged historical, geographical, economic and cultural notes. In California especially, where nearly all Australian plants flourish apparently as well as in their native land, this work should prove especially serviceable to cultivators of exotic plants. It is published by the Forest Branch of the Department of Mines and Agriculture of New South Wales, at Sydney, the price being 2s. 6d. for each part to subscribers, and 3s. 6d. for single parts.

Notes.

The Peach-blossom has been selected by a vote of the school-children of Delaware as the floral emblem of that state.

The Nomenclature Committee of the Society of American Florists desires information as to any cases of misnaming or confusion of names in American decorative plants, as well as of any other matters coming within the line of work of the committee. Communications should be addressed to the chairman of the committee, Professor William Trelease, St. Louis, Missouri.

In the Bulletin of the United States National Museum, No. 39, Dr. Frederick D. Coville, botanist of the Department of Agriculture, has recently printed some clear directions for collecting specimens of plants and information illustrating their aboriginal uses, which will be found useful to both travelers and settlers who have an opportunity to observe the habits of any of the tribes of American Indians.

An old legend traces the origin of the Thistle as the emblem of the Scottish kingdom to the far-away time when the Danes were invading the country. On a dark night, runs the story, as they were advancing to attack an encampment of Scots, one of them trod on a Thistle, and the thoughtless exclamation which followed awakened the slumberers, who, springing to arms, defeated their assailants. In gratitude for this deliverance the flower of the Thistle was adopted as the national emblem.

At a recent sale in Paris of the library of the architect Destailleur a copy of the first edition of *Le Traité de Jardinage selon les Raisons de la Nature et de l'Art*, by Jacques Boyceau de la Barauderie, realized two thousand francs. This exceedingly rare work, which contains a number of carefully engraved plates of parterres, and of which only a few copies are now known to exist, is said by Monsieur André, in a recent issue of the *Revue Horticole*, to give the only faithful account of the gardens of the time of Louis XIII. A copy of *Wilton Garden*, published in 1640, was sold at the same sale for six hundred francs, and *Le Fidèle Jardinier en Différentes Sortes de Parterres*, by Pierre Betin, published in Paris in 1636, brought five hundred and eighty-two francs.

On the banks of the Brandywine, near Wilmington, Delaware, gunpowder works were established by a Frenchman, Eleuthère-Irénée du Pont de Nemours, the American founder of the distinguished Dupont family of Delaware, who came to this country in 1799. They are still in existence and are carried on by the grandchildren of their founder. But his name has a further interest as that of the planter who is believed to have first introduced the European Chestnut into the United States. He was deeply interested in horticulture and agriculture, and in 1805 planted specimens of the French Chestnut on his Delaware estate. The original trees are no longer in existence, but their progeny are widely scattered through the middle states, where several named varieties, descendants of the Du Pont Chestnut, are recognized.

Professor F. L. Hanley, in the First Annual Report of the Maine Forestry Commission, argues, from an examination of the statistics of the lumber produced on the Penobscot River, that the lumber industry is waning in the Pine-tree State. In 1856 the cut on that river was about 180,000,000 feet; in 1866 this was increased to 237,000,000 feet, and in 1872, when it reached its maximum, to 246,000,000 feet. Since then it has gradually fallen, and in 1887 the yield was only about 150,000,000 feet. The great falling off has been in pine—from 101,000,000 feet in 1856 to 29,000,000 feet in 1887. To secure the present supply, too, it is necessary to cut every year nearer the head-waters of the streams and to cut smaller and poorer trees, which a few years ago would have been passed by as unmarketable. Logs which are now driven down the Penobscot do not contain an average of much over a hundred feet, board measure, of lumber, while twenty years ago they are said to have contained several hundred feet. The annual supply, too, is now largely cut from second, and even third, growth, and it is said that the time is approaching when the entire Maine lumber crop will come from forests that have been cut over. There are only limited areas, it appears, in the state where Pine follows Pine, and the second growth is inferior to the first.

All America is interested in the eventual fate of Jackson Park, in Chicago, and the latest accounts of the work that is to be done there sound very promising. According to a letter recently published in the *American Architect and Building News*, $80,000 has been handed over to the Board of South Park as the price received from the sale of the wrecked Fair buildings, and this money they will at once lay out in local improvements. The plan for them, which was prepared some time ago by Mr. Olmsted, will be followed as closely as possible. At the northern end of the park, in the neighborhood of the Fine Arts Building, which has been preserved under the name of the Field Museum, the landscape arrangements will be of a somewhat formal character, as suited to the environment of so large and so classic a structure. But a little farther off the drives curve in a more informal way around the lagoon and Wooded Island, until they sweep gracefully up to the top of the little eminence which, near the southerly end of the park, overlooks the Convent of La Rabida. The great golden statue of Liberty still stands, and where the peristyle formerly stood, between it and Lake Michigan, there will be a beautiful drive along the water's edge, following the lines of the shore from the long pier behind the statue back to the northern extremity of the pleasure-ground. Greenhouses are to be erected near the Field Museum, and here, we are told, "floral displays" will be concentrated, expressing a higher grade of taste, one must hope, than those which have hitherto existed in other places in the parks of Chicago. Certain tracts of land near where the great Manufacturers' Building stood will be prepared for tennis, baseball and other sports.

Writers in the Boston papers are making their annual protests against the larvæ of Tussock moths, Orgyia leucostigma, which for many years have destroyed the summer foliage of the trees on the Common. This year the caterpillars appear to be unusually numerous, not only on the Common, but on the trees in several streets on Beacon Hill, notably on Chestnut and Mount Vernon streets; and the secretary of the State Board of Agriculture has even addressed a letter to the Mayor of the city on the subject, warning him of the danger of allowing these insects to multiply, and pointed out the simple methods needed to exterminate, or, at least, to greatly check their ravages. Few insects are so easily destroyed as the Tussock moth. The wingless female lays her eggs on the outside of the cocoon from which she has just emerged, so that by destroying the cocoons which the caterpillars spin on the trunks and branches of trees and on the neighboring fences and walls the next year's brood of larvæ is killed. The cocoons may be easily distinguished during the winter on the trunks and bare branches, and it is not a difficult or expensive matter to pick them by hand or rub them off with stiff brushes. The city forester, discouraged, no doubt, by his attempts made several years ago to protect the trees on the Common from insects by injecting some mysterious compound into holes bored into the trunks, which have now developed in some cases into large and dangerous wounds, seems perfectly helpless in the matter, pleading the want of sufficient funds to enable him to clean the trees. More than $80,000 are expended annually under his sole direction, however, in maintaining the small public grounds of Boston. Some of this money is spent in keeping up a large greenhouse establishment to protect tropical plants in winter, which, as they are used in Boston, are an injury to the appearance of the city. What must be a considerable part of it goes into the floral emblems and other horticultural abominations which disfigure the Public Garden. The cultivated and intelligent Bostonians deplore the extravagance of their garden, and the example of bad taste which it sets, but it is generally praised by the press, and every year it grows more vulgar and less what such a garden should be. A small part of the money spent in making the Public Garden ugly would, if properly used, rid every tree in the city of insects.